

AMENDMENTS TO THE CLAIMS

1. (Currently amended) A ~~curable liquid~~ acryloyl group containing resin composition Michael addition reaction product of

(a) at least one compound having only one vinyl group, and

(b) at least one multifunctional acrylic ester, with

(c) at least one β -dicarbonyl group containing compound or resin, in which the β -dicarbonyl group has two activated hydrogen atoms in its methylene position,

wherein the equivalent ratio of the vinyl group of the vinyl compound (a) to the activated hydrogen atom of the compound or resin (c) is in the range from 0.01:1 to 0.9:1 and

the equivalent ratio of all unsaturated groups from both vinyl compound (a) and multifunctional acrylic ester (b) to the activated hydrogen atom of the compound or resin (c) is $>1.05:1$, and

wherein the resin composition is a curable liquid.

2. (Original) The composition according to claim 1, characterized in that component (a) is selected from the group consisting of acrylic esters (acrylates), alkyl vinyl ketones, acroleine, acrylonitrile, acrylamide or vinylsulfonate.

3. (Original) The composition according to claim 1, characterized in that component (c) is selected from the group consisting of acetoacetates, β -diketones or malonates.

4. (Previously presented) The composition of claim 1, characterized in that the vinyl compound has at least one additional functional group having atoms other than carbon and hydrogen.

5. (Previously presented) The composition according to claim 4, characterized in that the vinyl compound having at least one additional functional group is 2-hydroxyethyl acrylate, 2-hydroxypropyl acrylate, 2-hydroxybutyl acrylate, 3-hydroxybutyl acrylate, 4-hydroxybutyl acrylate, 6-hydroxyhexyl acrylate, N-alkoxymethyl acrylamide, N-acryloyl morpholine, glycidyl acrylate, 2-isocyanatoethyl acrylate, poly(ethylene glycol)monoacrylate, poly(propylene glycol)monoacrylate, perfluoroalkyl acrylate or poly(dimethylsiloxane)monoacrylate.

6. (Previously presented) A process for the preparation of the curable liquid acryloyl group containing resin composition as claimed in claim 1, comprising the step of Michael addition reacting

(a) at least one compound having only one vinyl group, and

(b) at least one multifunctional acrylic ester with

(c) at least one β -dicarbonyl group containing compound or resin, in

which the β -dicarbonyl group has two activated hydrogen atoms in its methylene position,

such that the equivalent ratio of the vinyl group of the vinyl compound (a) to the activated hydrogen atom of the compound or resin (c) is in the range from 0.01:1 to 0.9:1 and

the equivalent ratio of all unsaturated groups from both the vinyl compound (a) and the multifunctional acrylic ester (b) to the activated hydrogen atom of the compound or resin (c) is $>1.05:1$.

7. (Previously presented) A process for the preparation of the curable liquid acryloyl group containing resin composition as claimed in claim 1, comprising the steps of

(1) Michael addition reacting

(a) at least one compound having only one vinyl group, with

(c) at least one β -dicarbonyl group containing compound or resin, in

which the β -dicarbonyl group has two activated hydrogen atoms in its methylene position,

to yield a mono-substituted β -dicarbonyl group containing compound or resin, in which the mono-substituted β -dicarbonyl group has only one activated hydrogen atom in its methylene position, and

(2) reacting said mono-substituted β -dicarbonyl group containing compound or resin with

(b) multifunctional acrylic ester.

8. (Previously presented) The process according to claim 7, wherein the equivalent ratio of the vinyl group of the vinyl compound (a) to the activated hydrogen atom of the compound or resin (c) is in the range from 0.01:1 to 0.9:1 in the step (1), and the equivalent ratio of vinyl group of the multifunctional acrylic ester (b) to the activated hydrogen atom of the mono-substituted β -dicarbonyl group containing compound or resin is $>1.05:1$ in the step (2).

9. (Previously presented) A process according to claim 6, wherein the vinyl compound (a) has at least one additional functional group other than vinyl group.

10. (Previously presented) The process according to claim 6, wherein the process is carried out in the presence of a Michael addition catalyst.

11. (Original) A curing method, comprising the step of curing a curable liquid acryloyl group containing resin composition according to claim 1 by ultraviolet light or electron beam or heat.

12. (Original) The curing method according to claim 11, wherein the curing step is carried out in the absence of a photoinitiator.

13. (Original) A cured product obtained by the curing method according to claim 12.

14. (Original) A cured product obtained by the curing method according to claim 11.

15. (Original) A curing method, comprising the step of curing a curable liquid acryloyl group containing resin composition according to claim 2 by ultraviolet light or electron beam or heat.

16. (Original) The curing method according to claim 15, wherein the curing step is carried out in the absence of a photoinitiator.

17. (Original) A cured product obtained by the curing method according to claim 16.

18. (Original) A cured product obtained by the curing method according to claim 15.

19. (Original) A curing method, comprising the step of curing a curable liquid acryloyl group containing resin composition according to claim 3 by ultraviolet light or electron beam or heat.

20. (Original) The curing method according to claim 19, wherein the curing step is carried out in the absence of a photoinitiator.

21. (Original) A cured product obtained by the curing method according to claim 20.

22. (Original) A cured product obtained by the curing method according to claim 19.

23. (Original) A curing method, comprising the step of curing a curable liquid acryloyl group containing resin composition according to claim 4 by ultraviolet light or electron beam or heat.

24. (Original) The curing method according to claim 23, wherein the curing step is carried out in the absence of a photoinitiator.

25. (Original) A cured product obtained by the curing method according to claim 24.

26. (Original) A cured product obtained by the curing method according to claim 23.

27. (Original) A curing method, comprising the step of curing a curable liquid acryloyl group containing resin composition according to claim 5 by ultraviolet light or electron beam or heat.

28. (Original) The curing method according to claim 27, wherein the curing step is carried out in the absence of a photoinitiator.

29. (Original) A cured product obtained by the curing method according to claim 28.

30. (Original) A cured product obtained by the curing method according to claim 27.

31. (Original) The composition according to claim 2, characterized in that component (c) is selected from the group consisting of acetoacetates, β -diketones or malonates.

32. (Previously presented) A process according to claim 7, wherein the vinyl compound (b) has at least one additional functional group other than vinyl group.

33. (Previously presented) The process according to claim 7, wherein the process is carried out in the presence of a Michael addition catalyst.